1992 INDUSTRY REPORT CARD

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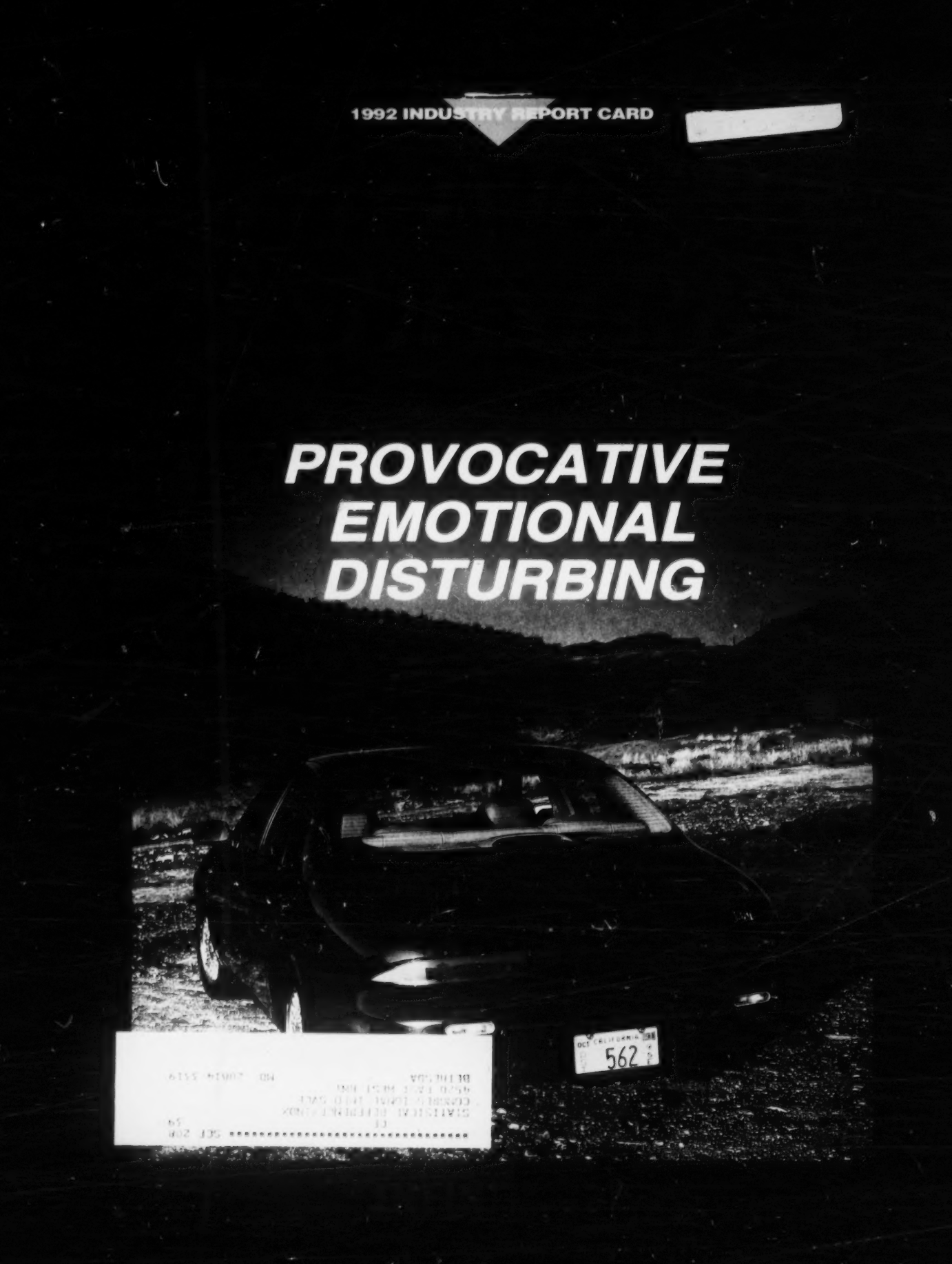

Volume 172, No. 4 April 1992

CHILTON'S
# AUTOMOTIVE INDUSTRIES

*Infiniti's new J30 is designed to stir the emotions. Here's where subliminal sells.*
COVER PHOTOGRAPHY: RICHARD GEORGE

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Cedric platform will carry California design.
*by Gerry Kobe*

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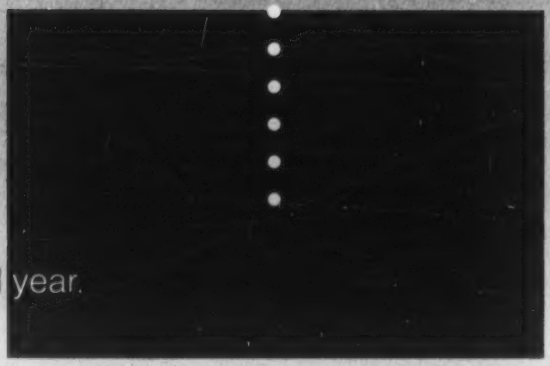
# INDUSTRY REPORT CARD

## 1991 was a bad year, a very bad year.



**Who needs to be reminded? 1991 was a terrible year for almost every company selling cars and trucks in the US market. Sales fell 1.5 million units (11.1%) to 12.3 million units—the worst since 1983.**

Yet as bad as it was, the current downturn didn't even come close to the deplorable sales years of 1981 and 1982, when 1.8 million and 1.6 million fewer vehicles were sold, respectively.

Despite the impression that it was only the Big Three which fared poorly in 1991, import brands suffered, too. For the Europeans it was a total disaster. Their sales slipped more than 26% to an annual total of only 334,000 units. For some it was far worse. Audi fell over 42%, Jaguar sales fell 50%, Porsche by more than 50%. For others it was too much. Peugeot and Rover simply gave up and dropped out of the US market.

Even the Japanese found it was a tough market. Only two months ago Daihatsu also announced it was dropping out of the US market. For the full year, sales of Japanese-brand cars fell by 100,000 (3.8%) to 2,486,000. Amazingly, more than half of this downturn came from a slump in Honda's sales. Japanese-brand trucks fell 38,000 units (51%) to 700,000. Nonetheless, sales of Japanese-brand vehicles fell less than the overall market and as a result most Japanese automakers increased their market share. Korean-made vehicles slipped 35,760 units (15.6%) to 193,000.

Amongst the Big Three, Chrysler did the best, by far. Though sales slipped 190,000 units, Chrysler ended up the year exactly where it started, with 12.2% of the US market. The company did an amazing job of increasing sales of minivans and that saved the company's market share.

Sales of GM's products in the US market fell 613,000 units to 4,320,143, and as a result the company lost only half a point of share.

Comparatively speaking, Ford did the worst and saw its sales plunge by 506,000 units, which meant it lost a full point of share.

Obviously, there is a lot more to measuring a company's success than tracking its sales and market share. That's why *Automotive Industries* once again presents its Industry Report Card in which we grade each automaker according to how it has performed in six different categories. We then compare each company against its past efforts, and sum it up its progress (or lack thereof) with an overall grade.

# CHRYSLER

**Quality:** Chrysler showed a solid improvement in quality since last year's rating which is based on J.D. Power's Initial Quality Survey (IQS). Chrysler's defects per 100 cars decreased by 2.6%. That's the good news. The bad news is that its quality is still substantially worse than Ford's or GM's. Nonetheless, Chrysler is poised to completely replace its product line in the next five years, so we should see measurable improvements in the years to come. And since two of those product lines—the Jeep Grand Cherokee and LH cars—debut this year, we shouldn't have long to wait.

**Profit/Unit:** Chrysler lost about $427 on every vehicle it made last year. And though that isn't a recipe for success, at least it outperformed GM and Ford in this category. The reason for this, of course, is Chrysler's impressive cost-cutting campaign. If the company can deliver on its promise to cut back on "program" cars that are sold to fleets and rental companies, it could improve its profitability immediately. Program cars cost Chrysler an estimated $3000 in incentives per vehicle, which is twice the average cost of rebates it uses in the retail market.

**Market Share:** Despite all the bad press about sinking sales that Chrysler suffered in 1991, many in the media seemed to have missed one crucial point. Chrysler didn't lose any market share during the year—absolutely none. Market share of cars was down only 0.63 points, but on the truck side Chrysler made up for that. Minivans sales surged strongly due to a new design, a special $14,000 package on short wheelbase versions, and very aggressive marketing including rebates. The Dakota also showed surprising strength. Could it be that Chrysler has finally found a new niche in the truck market?

**Return on Sales:** Chrysler's bottom line looked terrible last year. But at least there are some glimmers of hope for 1992. For one thing, the company came very close to turning a profit in the fourth quarter, not including its sale of Diamond-Star. Had sales been stronger, it would have turned an operating profit even without the income from the Diamond-Star sale. Today, of course, sales are starting to pick up. Better still, with the Grand Cherokee and LH cars, Chrysler will be in higher-profit segments, and that bodes well for the bottom line.

**Productivity:** In 1991 Chrysler added 3000 employees to the payroll at the same time vehicle output was plunging. That hurt its productivity numbers, which fell 8.3% compared to the year before. Unfortunately, our productivity measure—vehicles/employee/year—doesn't account for a drop-off in sales caused by a downturn in the marketplace. And that's the only thing that seems to have caused the company's slide in this category.

**Inventory Turns:** Chrysler's manufacturing people performed something of a miracle in the last year. Even though vehicle output in Chrysler's factories fell 7%, inventory was reduced by a whopping 21%. Translated into dollars, that means the manufacturing people freed up at least $150 million for a corporation that is hard-pressed for cash. If this is indicative of what the manufacturing staff can achieve in a terrible market, then it is truly becoming a valuable asset for the corporation.

## Chrysler

| Category | '73 | '78 | '87 | '88 | '89 | '90 | '91 | '91 Grade |
|---|---|---|---|---|---|---|---|---|
| **Quality (Defects/100)** | ---- | ---- | 178 | 202 | 169 | 172.5 | 168 | A |
| **Profit/Unit** | $127 | ($129) | $853 | $649 | $249 | $209 | ($427) | F |
| **Market Share** | 15.6% | 11.2% | 12.3% | 13.9% | 13.7% | 12.2% | 12.2% | A |
| **Return on Sales** | 2.1% | (1.5%) | 4.5% | 3.0% | 1.0% | 0.2% | (2.7%) | F |
| **Productivity*** | 13.0 | 13.1 | 16.2 | 18.0 | 19.5 | 17.9 | 16.4 | D |
| **Inventory Turns** | 5.6 | 6.3 | 16.8 | 21.6 | 26.3 | 22.5 | 26.0 | A+ |

**1991 Overall Grade: C**

* Cars/Employee/Year

# FORD

**Quality: Ford's quality improvement was nothing short of phenomenal in 1991. In the last year the company achieved an impressive 10.5% gain and pulled itself into the top five companies on the Initial Quality Survey prepared by J.D. Power. The only companies that now exceed the Ford Motor Company's overall quality rating are Toyota, Mercedes, Honda and Subaru—in that order. However, Honda and Subaru are barely ahead of the Ford Division. The typical Ford only has 0.01 more defects than a typical Subaru, and only 0.16 more than a Honda. And a typical Lincoln only has 0.22 more defects than an Acura.**

Profit/Unit: Ford lost over $700 on every vehicle it sold last year. Not only does that reflect the tough times the company has faced in the North American market, it shows that the profitability of the company's once-strong European operations has collapsed. Actually, we should say the collapse of Ford's UK operations. While Ford made a profit on the continent, combined losses at Jaguar and Ford of Britain came to $1.1 billion. And the future doesn't look too bright. Though sales in the US are expected to start to turn around this year, the European market is expected to be very weak, especially since last year's sales boost from German reunification will not be there to mask the slowdown elsewhere in the EC.

Market Share: Ford's quality rating may have improved dramatically, but from a sales standpoint 1991 was abysmal for the company. In an industry that fights tooth and nail over tenths of a share, Ford lost a full point of market share. None of Ford's cars sold better than the year before, save the Tracer and Capri. However, the Taurus/Sable and Tempo did manage to increase share in their segments.

**On the truck side Ford did somewhat better and only lost $^3/_{10}$ths of point of market share. The real bright spot, of course, was the Explorer, which literally blew all its competitors by the wayside. And by the end of the year the Aerostar and the restyled F-series were showing real strength.**

**Return on Sales: Anyway you measure it, Ford's financial performance was dismal in 1991. In total, the company lost $2.3 billion. And the losses on automotive operations were even worse: $3.2 billion in red ink. However, by the fourth quarter the company was losing less money on lower volume compared to 1990—hardly something to brag about—but at least it shows that Ford could be ready to quickly work its way back to profitability with an upturn in the US market.**

Productivity: Just as it did in quality, Ford achieved an amazing improvement in productivity. A miniscule part of this improvement is due to the fact that Ford's New Holland tractor operations were sold, and those employees and their output are not factored into the 1991 productivity figures. Ford's improvement shows that the company is getting better worldwide—not just in the US. Even so, Ford is still not up to the efficiency rating it achieved several years ago.

Inventory Turns: When it comes to managing its manufacturing operations, Ford is truly achieving constant improvement. Even though worldwide sales declined in 1991, and many US plants had to be temporarily closed from time to time, Ford was able to turn over its inventory more often. This helps to explain why the company's quality keeps getting better and better—with less inventory lying around, any quality problem quickly rises to the surface, where it can be identified and eliminated.

**Ford**

| Category | 1977 | 1978 | 1987 | 1988 | 1989 | 1990 | 1991* | Grade |
|---|---|---|---|---|---|---|---|---|
| **Quality (Defects/100)** | ---- | ---- | 156 | 169 | 143 | 147.6 | 132 | A+ |
| **Profit/Unit** | $260 | $360 | $1023 | $1014 | $663 | $53 | ($700) | F |
| **Market Share** | 29.8% | 26.5% | 23.1% | 23.7% | 24.6% | 23.8% | 22.8% | D |
| **Return on Sales** | 3.9% | 3.7% | 6.4% | 5.7% | 3.9% | 0.8% | (2.5%) | F |
| **Productivity*** | 13.7 | 13.8 | 18.7 | 19.9 | 19.6 | 16.5 | 17.9 | B |
| **Inventory Turns** | 5.3 | 6.5 | 15.6 | 17.3 | 18.0 | 21.0 | 21.8 | A+ |

**1991 Overall Grade: C**

* Cars/Employee/Year

# GENERAL MOTORS

Quality: Our quality rating, which is based on J.D. Power's Initial Quality Survey (IQS), shows that GM's quality trend went in the wrong direction. The number of defects per 100 vehicles increased by 1% from last year's rating. In today's quality-conscious market, that's a bad omen. Once again B-O-C took top quality honors at GM, placing in the top 13 of all 34 brands that are ranked in the IQS.

Surprisingly, Buick fell substantially in the ratings, but Olds and Cadillac more than made up the slack. Saturn placed in the middle of the pack—not bad considering it was the first time it was ranked. The biggest drag on GM's overall quality rating came from Pontiac, Geo and Chevrolet which saw their quality drop significantly.

Obviously, something isn't working right at C-P-C, at least as far as the IQS is concerned.

Profit/Unit: General Motors lost an average of $883 on every vehicle it sold in 1991.

But that's a worldwide average. In the United States the losses were far worse. GM lost close to $2000 on every vehicle it sold in the US last year, compared to a profit of nearly $1000 on every vehicle it sold in Europe. GM also turned a profit in Canada and Latin America. Obviously, GM must turn its US operations around.

And as with its problems in quality, GM's big problem with losses on its automotive operations lies with C-P-C.

Market Share: GM struggled to hold onto market share all year and did a valiant job with its passenger cars.

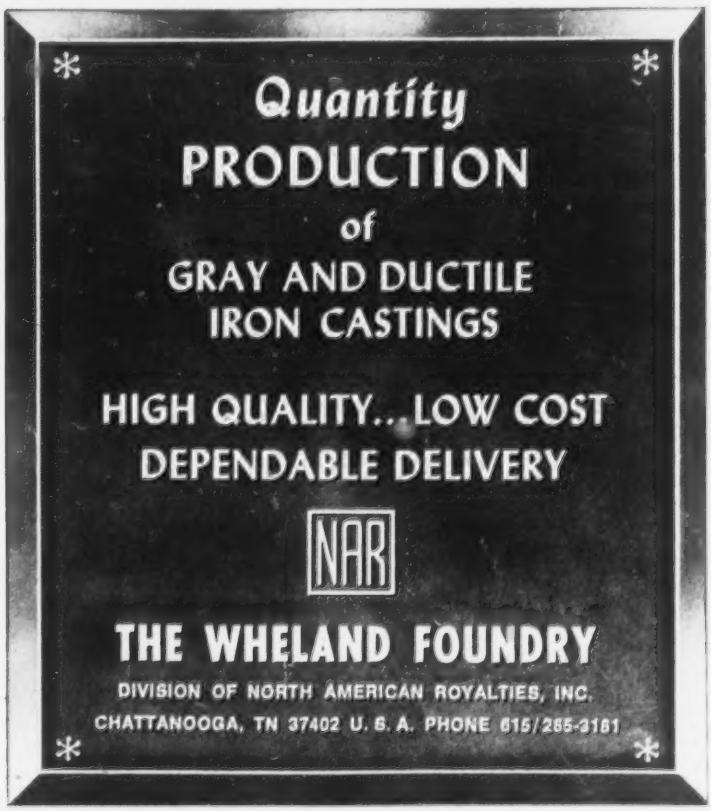
Despite a falloff of 400,000 passenger cars, its share was up 0.15 points—not much, but at least it was in the right direction. Yet, virtually all of the credit for this goes to Buick,

## General Motors

| Category | | | | | | | | Grade |
|---|---|---|---|---|---|---|---|---|
| Quality (Defects/100) | ---- | ---- | 176 | 165 | 158 | 149 | 150.5 | D |
| Profit/Unit | $490 | $684 | $435 | $692 | $645 | ($462) | ($883) | F |
| Market Share | 51.5% | 47.3% | 34.7% | 34.9% | 35.0% | 35.5% | 35.1% | A |
| Return on Sales | 6.7% | 5.5% | 3.5% | 4.4% | 3.8% | (1.6%) | (3.6%) | F |
| Productivity* | 11.4 | 12.1 | 11.3 | 12.9 | 12.6 | 12.0 | 11.8 | C |
| Inventory Turns | 5.4 | 6.7 | 18.0 | 18.8 | 20.0 | 19.3 | 16.5 | D |

**1991 Overall Grade: D**

* Cars/Employee/Year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which enjoyed strong sales all year long. However Saturn can't be ignored either. By putting in a full 12 months' worth of sales, it helped GM increase its share.

But on the truck side GM fared poorly. It lost 154 points of share, which translated into a drop of 218,000 units. Sales were especially weak in full-size pick-ups and vans.

Return On Sales: From a financial standpoint 1991 had better go down as the poorest performance in GM's history. It's hard to imagine it could ever get worse.

Losses at the company's automotive operations grew 80% compared to 1990. And the growing red ink came despite a massive headcount reduction program, severe pressure on suppliers to cut costs, and a 50% cut in the dividend.

The recently announced restructuring will undoubtedly help GM cut costs in the future. But it could still take years before this takes effect—even after the market comes back.

Productivity: With sales dropping precipitously in the US market, it's not surprising that GM's productivity fell. Virtually no company can increase its overall efficiency under these circumstances. Factories have to be kept open and run at slow line rates to keep some amount of product flowing to the market. The fact that GM's productivity didn't fall more probably reflects substantial productivity gains at the company's operations in Europe.

Inventory Turns: The same reasons that explain GM's declining productivity should explain its decline in inventory turns.

On the other hand, both Ford and Chrysler were able to increase their turns despite the same adverse business and sales conditions. This suggests that GM was simply not able to do as good a job as its domestic competitors. AI


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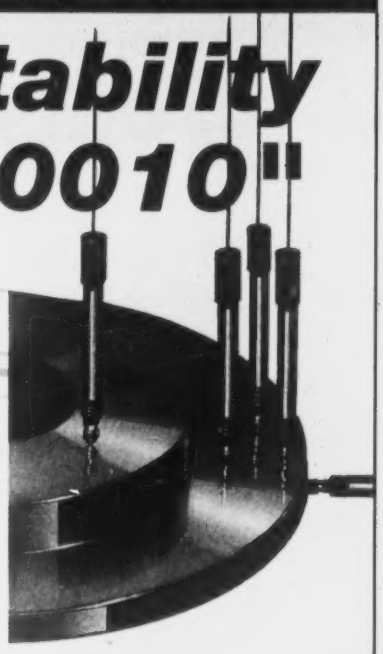

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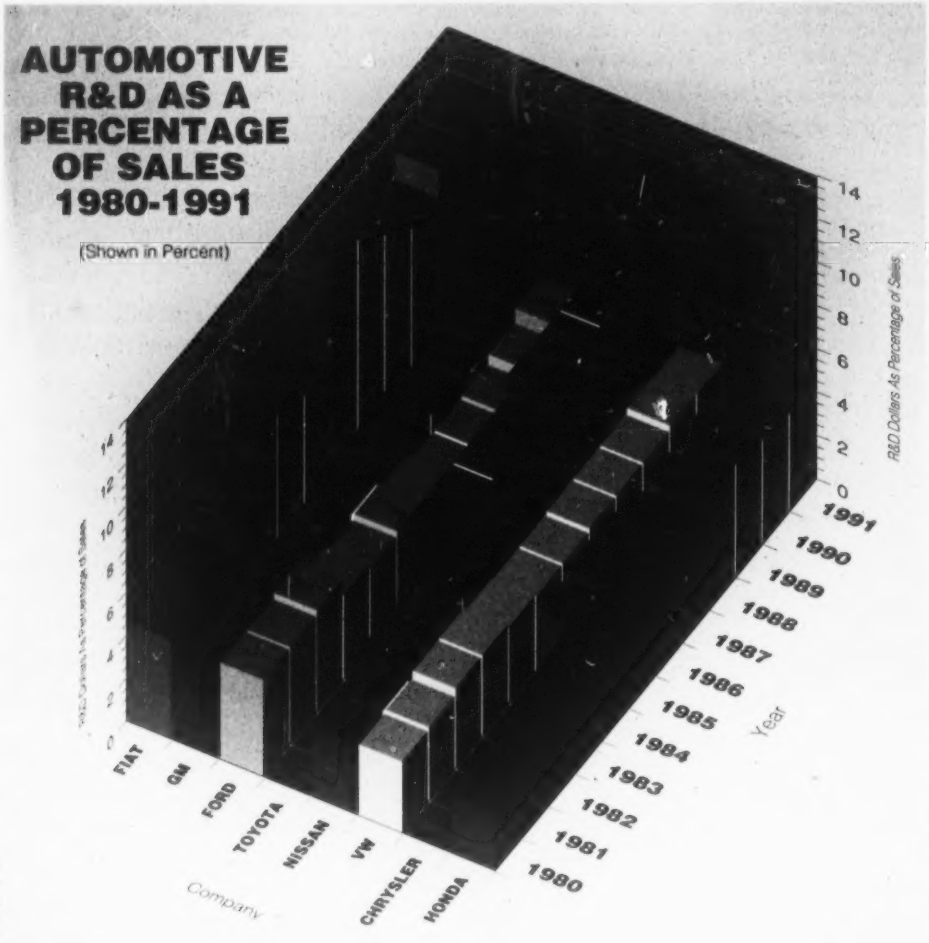
by JOHN McELROY

# R&D SPENDING COMPARISON

## Why do Japanese automakers have a sparkling reputation for innovation? They put proportionately more resources into Research and Development than the Europeans or Americans.

Based on an *Automotive Industries* comparison of R&D spending over a 10-year period, it becomes readily apparent why Japanese automakers have earned a sparkling reputation for technological innovation: Japanese automakers commit proportionately more resources to research and development than their US or European counterparts.

Moreover, just as Japanese car companies are able to design new products or build new factories for much less investment than their Western counterparts, it is likely they also get a lot more 'bang for their buck' in their R&D expenditures. For example, even though Toyota spends about the same on R&D as Ford, and Nissan spends about the same as VW, both Japanese companies are introducing more new products and features into the marketplace, and they're doing it more often.




Because Japanese automakers spend more money as a percent of total sales on R&D, they have caught up to the bigger Western automakers. Though Toyota is smaller than Ford, it spends nearly as much on R&D.

And Honda, which is a smaller company than Chrysler, caught up to the US automaker in R&D in 1986 and has outspent it ever since. Additionally, GM and Ford must spread their R&D investment over a larger production base. And since Japanese automakers are less vertically integrated than GM and Ford, they can leverage the R&D spending of their suppliers for an even greater technology advan-

MARTIN

tage. What the figures in these charts don't reveal is how much of this R&D money is spent on the 'R' or how much is spent on the 'D.'

But if industry norms are any indication, it's likely the Japanese have an advantage here as well. American and European automakers seem to spend more time de-bugging new products and technologies, which means less of their R&D money is being spent purely on research.

Another difficulty in comparing R&D expenditures is figuring out how companies compile their figures. When one looks at Fiat, for example, the figures strongly suggest that the Italian automaker is including many other costs in its R&D expenditures that other companies don't use. Fiat likely incorporates product-related expenses, such as new-product launch costs that its competitors don't consider to be part of research or development.

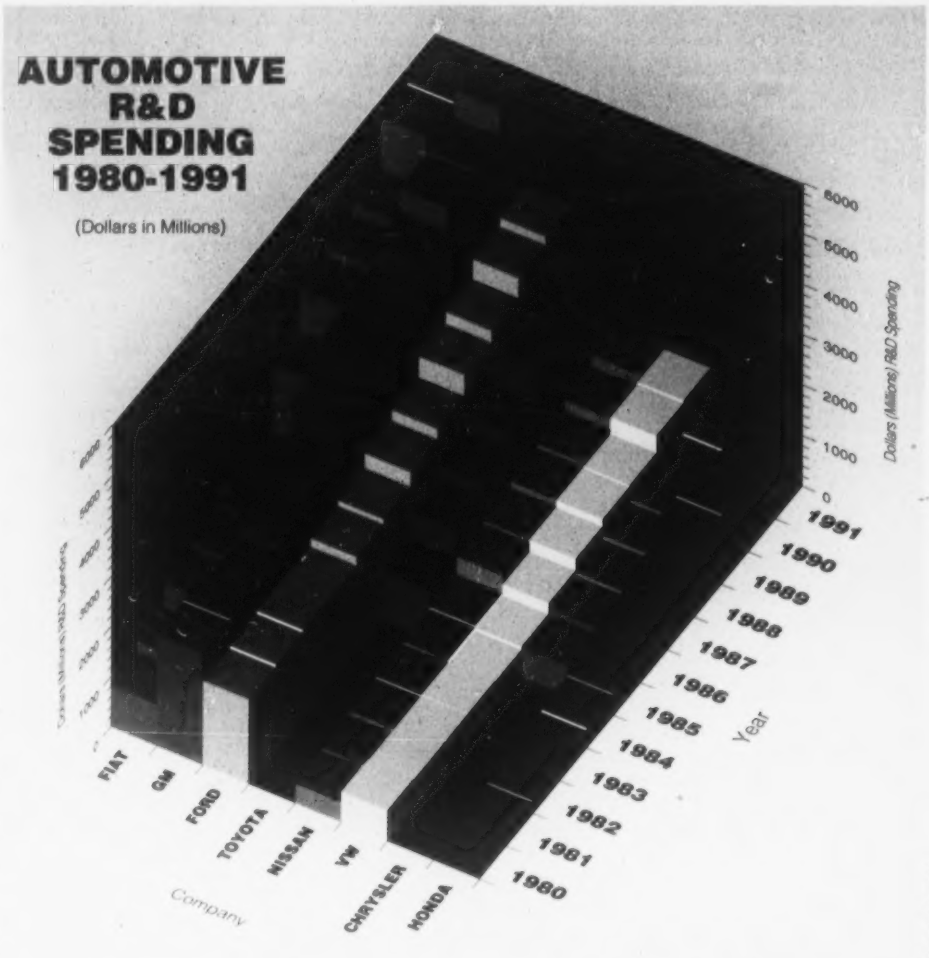
Of course, measuring R&D expenditures isn't necessarily the best way of determining which automaker is gaining a technological edge on its rivals. There are numerous examples of Japanese automakers developing technologies that are little more than gimmicks. The talking dashboard fiasco that Nissan initiated in the early 1980s is the most classic example (though the limited value to the customer certainly didn't prevent Chrysler or General Motors from following suit). More recently, several Japanese automakers have beat their Western competitors to the market with four-wheel-steering, and digital signal processing technology for radios. Though not gimmicks, they have been a sales flop everywhere but in the Japanese home market. And even though these two technologies could still emerge as important innovations, consumers in the US and Europe certainly haven't seen much value in them as they're currently being implemented.

Another important caveat in determining which automaker has a technological edge is the temporary nature of that edge. In today's auto industry, a technological lead is often measured in months. At most, an automaker will enjoy a lead of 12 to 24 months. And that may only serve to test the waters, allowing other automakers to avoid the leader's marketing mistakes.

Since any component or feature can be acquired by a competitor, taken apart and reverse-engineered, the followers can often be right on the heels of the leader for only a fraction of the R&D investment. Throughout the 1950s, 1960s and 1970s this was a favorite tactic of Japanese automakers.

This points out the need to emphasize process development over product development. In today's global economy, where product technology can be quickly transferred anywhere in the world, the advantage is going to go to that company which can manufacture it at a lower cost with higher quality.

Though the R&D spending figures

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in these charts don't break down how much goes to process development or how much goes to product development, it would seem safe to say that once again the Japanese are out in front. And process technology, which is not available in a dealer's showroom and can be kept away from competitors' prying eyes, is an area where a company can enjoy an advantage for a long time. Toyota's Flexible Press System (hydro-forming), and Nissan's IBAS (intelligent body assembly system) are but two recent examples of process technology that are years from being implemented by Western automakers.

Finally, it should be noted that since the R&D expenditures in these charts are expressed in US dollars, exchange rates have exaggerated the increases at Toyota, Nissan, Honda, Volkswagen and Fiat since the mid-1980s. The value of the yen increased 30% in 1986, the lira increaseed 22%, and the Deutschemark increased 17% in 1987. Nonetheless, since the Japanese automakers spend a greater percentage of sales on R&D they are still committing proportionately more resources, and are likely to increase their advantage in technology in the years to come. AI

## Worldwide Automotive Research & Development

| Company | Year | Factory Sales | $ R&D Spending | $ R&D as % of Sales |
|---|---|---|---|---|
| FIAT | 1980 | 2,397 | 830 | 4.6 |
| | 1981 | 1,987 | 1,060 | 6.0 |
| | 1982 | 2,045 | 1,580 | 6.8 |
| | 1983 | 2,185 | 1,740 | 9.1 |
| | 1984 | 2,267 | 1,870 | 9.0 |
| | 1985 | 2,058 | 1,960 | 8.3 |
| | 1986 | 2,317 | 3,330 | 13.0 |
| | 1987 | 2,648 | 4,170 | 12.5 |
| | 1988 | 2,731 | 4,330 | 11.2 |
| | 1989 | 2,983 | 4,560 | 10.0 |
| | 1990 | 2,858 | 5,610 | 11.2 |
| | 1991 | 2,694 | 5,650 | 11.2 |
| GM | 1980 | 7,101 | 2,224 | 3.8 |
| | 1981 | 6,762 | 2,250 | 3.5 |
| | 1982 | 6,244 | 2,175 | 3.6 |
| | 1983 | 7,769 | 2,602 | 3.5 |
| | 1984 | 8,256 | 3,076 | 3.6 |
| | 1985 | 9,305 | 3,625 | 3.7 |
| | 1986 | 8,576 | 4,158 | 4.0 |
| | 1987 | 7,765 | 4,361 | 4.2 |
| | 1988 | 8,108 | 4,754 | 3.8 |
| | 1989 | 7,946 | 5,247 | 4.1 |
| | 1990 | 7,451 | 5,341 | 4.2 |
| | 1991 | 7,015 | 5,887 | 4.8 |
| FORD | 1980 | 4,426 | 1,675 | 4.5 |
| | 1981 | 4,402 | 1,718 | 4.5 |
| | 1982 | 4,328 | 1,764 | 4.7 |
| | 1983 | 5,001 | 1,751 | 3.9 |
| | 1984 | 5,667 | 1,915 | 3.6 |
| | 1985 | 5,634 | 2,018 | 3.8 |
| | 1986 | 5,984 | 2,305 | 3.6 |
| | 1987 | 6,115 | 2,514 | 3.1 |
| | 1988 | 6,517 | 2,930 | 3.1 |
| | 1989 | 6,408 | 3,167 | 3.2 |
| | 1990 | 5,872 | 3,558 | 3.6 |
| | 1991 | 5,359 | 3,728 | 4.2 |
| TOYOTA | 1985 | 3,535 | 974 | 4.0 |
| | 1986 | 3,685 | 1,528 | 4.0 |
| | 1987 | 3,689 | 1,816 | 4.0 |
| | 1988 | 3,872 | 2,170 | 4.0 |
| | 1989 | 4,113 | 2,785 | 5.0 |
| | 1990 | 4,429 | 3,004* | 5.0* |
| | 1991 | 4,538 | 3,570* | 5.0* |
| NISSAN | 1980 | 2,472 | 397 | 3.3 |
| | 1981 | 2,617 | 453 | 3.3 |
| | 1982 | 2,557 | 542 | 4.2 |
| | 1983 | 2,462 | 568 | 4.2 |
| | 1984 | 2,499 | 625 | 4.0 |
| | 1985 | 2,473 | 650 | 4.3 |
| | 1986 | 2,427 | 1,009 | 4.5 |
| | 1987 | 2,633 | 1,072 | 4.5 |
| | 1988 | 2,536 | 1,209 | 4.5 |
| | 1989 | 2,789 | 1,303 | 5.0 |
| | 1990 | 2,936 | 1,517 | 5.5 |
| | 1991 | 3,127 | 1,764 | 5.9 |
| VW | 1980 | 2,529 | 605 | 3.3 |
| | 1981 | 2,279 | 574 | 3.4 |
| | 1982 | 2,120 | 576 | 3.7 |
| | 1983 | 2,127 | 587 | 3.7 |
| | 1984 | 2,145 | 562 | 3.5 |
| | 1985 | 2,398 | 611 | 3.4 |
| | 1986 | 2,758 | 829 | 3.4 |
| | 1987 | 2,774 | 1,056 | 3.5 |
| | 1988 | 2,854 | 1,195 | 3.5 |
| | 1989 | 2,941 | 1,222 | 3.5 |
| | 1990 | 3,030 | 1,546 | 3.7 |
| | 1991 | 3,300 | 1,598* | 3.6* |
| CHRYSLER | 1985 | 2,157 | 609 | 2.8 |
| | 1986 | 2,198 | 731 | 3.2 |
| | 1987 | 2,450 | 798 | 3.0 |
| | 1988 | 2,566 | 881 | 2.4 |
| | 1989 | 2,381 | 954 | 2.7 |
| | 1990 | 1,984 | 908 | 2.9 |
| | 1991 | 1,866 | 955 | 3.2 |
| HONDA | 1980 | 3,447[a] | 143 | 2.7 |
| | 1981 | 3,907[a] | 222 | 2.7 |
| | 1982 | 4,562[a] | 249 | 3.1 |
| | 1983 | 4,776[a] | 348 | 3.7 |
| | 1984 | 4,306[a] | 397 | 3.9 |
| | 1985 | 4,206[a] | 424 | 4.1 |
| | 1986 | 4,446[a] | 730 | 4.5 |
| | 1987 | 4,205[a] | 947 | 5.0 |
| | 1988 | 4,533[a] | 1,361* | 5.3* |
| | 1989 | 4,935[a] | 1,391 | 5.2 |
| | 1990 | 4,923[a] | 1,176 | 4.8 |
| | 1991 | 5,313[a] | 1,376 | 4.5 |

**Source: Annual Reports, Company Literature**

* Estimate [a] Includes Motorcycles

MARTIN